WHAT IS CLAIMED IS:

1. A method for analyzing a system for safety to personnel or other systems, said method comprising:

a) segmenting a product into subcomponents for hazard review;

b) identifying at least one operating parameter of a first subcomponent of said product;

c) identifying an inherent hazard of said first subcomponents based on an analysis of the at least one operating parameter;

d) identifying features of the structure or operation of the subcomponent corresponding to the inherent hazard;

e) identifying modifications or controls for the identified features which would mitigate the inherent hazard;

f) prioritizing the identified features with respect to the effect that each of said features has on safety of the product;

g) identifying current documentation that defines the structure or operation of the subcomponent;

h) including in the current documentation, a safety audit procedure that identifies one or more of said prioritized features for inspection, and

i) determining whether an unsafe condition could result from the inherent hazard after step (e).

2. A method as in claim 1, wherein an unsafe condition has been determined, further conducting a hazardous operation review comprising:

j) identifying at least one contributing factor to the unsafe condition, where said factors are selected from a group comprising at least one of: a design deviation of the subcomponent, an operating mode of the subcomponent, and a mode of personal interaction with the subcomponent;

k) generating a matrix correlating the identified features and the contributing factors, wherein the matrix identifies the at least one contributing factor corresponding to each of the identified features;

l) creating a hazardous operation table that identifies for each of said identified features a cause of the corresponding contributing factor and the modifications and controls to mitigate the hazard;

m) determining a risk of the hazard based on a severity level of the unsafe condition corresponding to the hazard and a likelihood of an occurrence of the hazard;

n) if the risk exceeds a predetermined level, identifying further modifications or controls for the identified features which would mitigate the inherent hazard, and then repeating the determination of risk step until the risk is no greater than the predetermined value or no further modifications or controls are identifiable.

3. A method as in claim 2 further comprising an accident scenario review, if after step (n) the severity exceeds the predetermined level, said accident scenario review comprising:

o) identify one or more of the inherent hazards contributing to the unsafe condition;

p) generate a logical path of steps leading from the identified inherent hazards to an accident occurring due to the unsafe condition, wherein the logical path is generated using the hazardous operations table;

q) identify the steps of the logical path that, if avoided, would prevent the accident;

r) for each identified step, assign a likelihood level of a probability that the step will occur, and

s) if the likelihood level for proceeding through the steps to the final unsafe condition exceeds a predetermined threshold, identifying modifications or controls which would mitigate the inherent hazard.

4. A method for analyzing a system for safety to personnel or other systems, said method comprising:

a) segmenting a product into subcomponents for hazard review;

b) identifying an inherent hazard of a first subcomponents;

c) determining whether an unsafe condition may result from the hazard and assigning a severity level to the unsafe condition;

d) determining a risk of the hazard based on the severity level of the unsafe condition corresponding to the hazard and a likelihood of an occurrence of the hazard;

e) issuing control actions to mitigate the identified hazard;

f) terminating the method if the determined severity level is no greater than the predetermined severity level;

g) devising an accident scenario based on the unsafe conditions and the identified hazard;

h) repeating steps (a) to (g) until the determined risk of a hazard is within predetermined risk level values.

5. A method as in claim 4, wherein steps (a) to (h) are performed for each sub-component of the product.

6. A method as in claim 4 wherein the product is a system, and the sub-components of the system are sub-systems.

7. A method of evaluating a product for safety, said method comprising:

a) determining if the product can be analyzed as a single component, and if true;

b) identifying single-point failures likely to cause a hazard;

c) reviewing product design features likely to cause the hazard;

(d) identifying unsafe conditions contributing to the hazard;

(e) assigning a severity level to each of the unsafe conditions of the hazard;

(f) completing the method if the severity level of each of the unsafe conditions is no greater than a predetermined threshold severity level;

(g) if one or more of the severity level of one or more of the unsafe conditions is greater than the threshold severity level, performing an accident scenario review; and

(h) identifying and issuing mitigating actions to prevent one or more of the unsafe conditions.

8. A method of evaluating a system as in claim 7 wherein the product is a system.

9. The method as in claim 7, further comprising:

determining overall risk level of the product;

comparing the overall risk level with predetermined risk level value; and

storing risk related data if the overall risk level is within predetermined risk level value.